

Howarth et al. is accordingly concerned with uniformity in the color of paper during production. The applicant submits that Howarth et al.'s system measures only color (col. 3, line 42), and thus sorts solely by color. The present invention does not sort by color; in fact, the present invention sorts paper of the same color (white) into 2 categories, 'high lignin' and 'low lignin'. This is due to the fact that the level of lignin can have an effect on the quality of paper, without necessarily changing its color.

There is no teaching or suggestion anywhere in the Howarth et al. disclosure that a UV light source can be used to measure the level of lignin in the paper. Howarth et al. use a separate source of UV light 22 (col. 2, lines 5 to 8), but its purpose is not indicated. This source of UV light 22 is **in addition** to a source of visible light 20 (col. 2, lines 5 to 8). At most Howarth et al. disclose that the reflected light (both ultraviolet **and** visible) is spectrally analyzed, without any indication that any method or algorithm is being used to measure relative lignin levels in various sheets of paper.

The present claims expressly recite "an optical filter disposed between the material and the detector to eliminate components of diffusely reflected light outside of the ultraviolet range." This is directly contrary to the teaching by Howarth et al., that light **from both light sources 20 and 22** reflects off of the paper and back to the lens to be analyzed (col. 3, lines 15 to 21).

The Examiner supports this objection with the assertion that the "lens 30" taught by Howarth et al. constitutes a "filter" as used in the present claims. With respect, there is no basis for this characterization. There is nothing in Howarth et al. that suggests that the lens 30 selectively blocks certain frequencies of light. In fact, by definition a lens passes all frequencies of light. Howarth et al. actually describe that the lens 30 collects light **from both light sources 20 and 22** that reflects off of the paper (col. 3, lines 15 to 21). The applicant submits that for this reason alone the objection under 35 U.S.C. 102(b) is unfounded.

However, the applicant also disagrees with the Examiner's assertion that the groundwood contaminants are inherently the amount of lignin which causes the paper product having different colors other than white color. This is neither true nor applicable to the present invention, because the present invention pertains to the separation of white sheets of paper 'such as newsprint' from other white sheets of paper. Howarth et al. does not care about this, because

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groundwood paper is not treated as a contaminant in their system – it just happens to be one of the types of paper manufactured by a mill.

Moreover, for the purposes of measuring the 'color' of a groundwood sheet, the Howarth et al. disclosure indicates that the reference sheet has to be one that is made from a similar material (i.e. groundwood pulp). In the present invention the comparison is made relative to a sheet that is a best representation of the 'white' grade. The Howarth et al. system is being used for quality assurance purposes, to detect minute differences in color between a sample sheet and a reference sheet of the same material during production. The scope and purpose of this system is totally different from that of the present invention.


Ultimately, however, the recitation in the present claims of "an optical filter disposed between the material and the detector to eliminate components of diffusely reflected light outside of the ultraviolet range," which is not taught or suggested by Howarth et al., renders the present claims allowable over the prior art.

Favourable reconsideration and allowance of this application are respectfully requested.

This response is accompanied by a Petition for an Extension of Time of one month. The Commissioner is authorized to charge the required fees to our Deposit Account No. 500663. A duplicate of this page is enclosed if required for this purpose.

Executed at Toronto, Ontario, Canada, on April 4, 2003.

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Encls. Duplicate of signature page
Petition for 1 month extension of time (in duplicate)